September 1, 2006

Rachel Schmeltz
ENERGY STAR Program Manager
US Environmental Protection Agency
Ariel Rios Building 6202J
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Dear Ms. Schmeltz,

The Consortium for Energy Efficiency (CEE) appreciates the opportunity to provide comments on the ENERGY STAR furnace specification (Version 2.0 – Draft 1). These comments were developed by CEE's Natural Gas Committee and Residential Heating Ventilation and Cooling Committee and are supported by the organizations listed below. Please note that CEE is only commenting on the second part of the proposed revision, the Tier II furnace fan efficiency requirement. CEE will leave comments on the proposed revision to the oil furnace requirements to those with experience with that technology.

CEE's members use the ENERGY STAR brand as a powerful tool within their own voluntary efficiency programs as a way to help consumers easily identify high-efficiency products. All of CEE's members with natural gas efficiency programs, 19 in total, offer incentives for fuel-efficient furnaces, and all specify the current ENERGY STAR level of 90% AFUE, or higher, as a minimum efficiency for incentives. Of these, nine have determined that electrically efficient furnaces are cost-effective for their customers and offer incentives for qualified equipment, often in conjunction with support and funding from electric utilities. Details of the efficiency levels promoted by members can be found in CEE's *2006 Gas Space Heating Program Summary* on-line at www.cee1.org/gas/gs-ht/06_progsum_space-ht.pdf.

After reviewing the proposed revision, CEE recommends that EPA consider several issues before finalizing any change to the furnace specification. Overall, CEE supports ENERGY STAR criteria for products that are cost-effective on a national basis. We comment here on whether the ENERGY STAR program should address electrical use within furnaces and also what metric might be appropriate.

CEE recognizes a potential benefit of electrically efficient furnaces in some regions but is not convinced the benefits accrue in other areas.
CEE would support an ENERGY STAR furnace electricity specification that is cost-effective to consumers throughout the nation. One of ENERGY STAR's principles for determining appropriate energy performance levels is that any cost differential at the time of purchase is recovered through utility bill savings over a period of time that is reasonable to the consumer. CEE supports this concept, and if furnaces qualify as ENERGY STAR but do not yield expected savings, we see a potential risk to the integrity of the ENERGY STAR brand, affecting all products supported by the brand. Member analyses of local costs and expected savings for electrically efficient furnaces have found that consumer payback varies significantly depending

on climate, fan usage, and energy rates. For example, a member from a region with a relatively mild climate found efficient furnace fans not to be cost-effective unless used for year-round, whole-house ventilation. Efficient furnace fan motors *were* found to be cost-effective in regions with either high heating demand (and long furnace run times) or high cooling demand where the furnace air handler is also used for an air conditioner.

We recommend that EPA analyze costs and expected savings and demonstrate to stakeholders that electrically efficient furnaces will produce adequate savings on a national basis, not just in high-usage areas. We believe consumer cost-effectiveness should take into account how the furnace fan is used, i.e., for heating, cooling, and possibly whole-house ventilation. We recognize that cost-effectiveness is difficult to analyze and may further be complicated by costs declining over time due to economies of scale. If a single national criterion would yield significantly different savings around the country, we urge EPA to consider developing regionally specific criteria or educational materials to ensure consumers are not disappointed with the energy performance of their ENERGY STAR-labeled furnaces.

CEE Recommends an Electrical Efficiency Criterion that is Capacity-Dependent

CEE does not support the proposed metric of kWh/year based on E_{ae}. We applaud EPA's efforts to develop a performance-based criterion, as this should encourage manufacturers to develop various efficient solutions, including better fan motors, fans, and controls. Preliminary analysis of the flat kWh/year, however, indicates that this metric would disadvantage large equipment which has a legitimate place in the market while allowing nearly all small-capacity equipment to qualify. CEE urges EPA to consider a capacity-dependent criterion to ensure that the label represents superior performance across a range of furnace capacities.

Additional Information for Consideration

In 2003, CEE adopted into its High-Efficiency Residential Gas Heating Initiative a specification for electrically efficient furnaces. In addition to meeting a minimum fuel efficiency of 90% AFUE, the electrical specification requires the annual electricity use (E_{ae}) to be no more than 2% of the total annual energy used (per the DOE test procedure). This specification was developed jointly with the Gas Appliance Manufacturers Association and their members who manufacturer residential gas furnaces. We believe that this performance metric and level effectively differentiate electrical efficiency in furnaces typically sold in colder parts of the country.

While capacity-dependent, the CEE specification was developed primarily for climates with a high heating load, e.g., New England and the upper Midwest. Furnaces in cooling-dominated climates typically use larger air handling fans (and motors) to meet the airflow requirements of air conditioning (when the furnace air handler is also used for air conditioning). This means that the CEE electricity specification disadvantages such furnaces because it does not differentiate or make adjustments for equipment with legitimately larger fans (relative to a given heating capacity). CEE does not know the extent to which its specification would be appropriate in cooling-dominated climates, but members in such climates are concerned that products necessary for their market would not be able to qualify were EPA to adopt CEE's specification for ENERGY STAR. Therefore, we urge EPA to develop criteria that would allow qualification of equipment designed to meet the higher airflow requirements of air conditioning loads. If it is not

possible to develop one criterion for the nation, perhaps separate criteria for furnaces that are for heating only versus heating and cooling would be an alternative solution.

In summary, CEE supports a revision to the ENERGY STAR furnace requirements to address electricity use if EPA can ensure that it can be done in a way that is cost-effective to consumers, applicable on a national level, capacity-dependent to allow for a full range of capacities, and appropriate where high cooling loads require relatively larger fans. If these concerns are met, then CEE is confident that the integrity and effectiveness of the ENERGY STAR label will be preserved with respect to ENERGY STAR furnaces.

Thank you for your consideration of these comments. Please contact CEE Program Manager Stephanie Jones at (617)-589-3949 ext. 202 or sjones@cee1.org with any questions.

Sincerely,

Marc Hoffman
Executive Director

Supporting Organizations

Bay State Gas
BC Hydro
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KeySpan Energy Delivery New England
Minnesota Department of Commerce, State Energy Office
National Grid
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